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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/526,218

03/01/2005

Hiroya Takaya

2004-1595A

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EXAMINER

KIM, TAE JUN

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

06/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/526,218

Applicant(s)

TAKAYA ET AL.

Examiner

Ted Kim

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 April 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 6 is objected to because of the following informalities: "protrusion" should be --protrusions--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

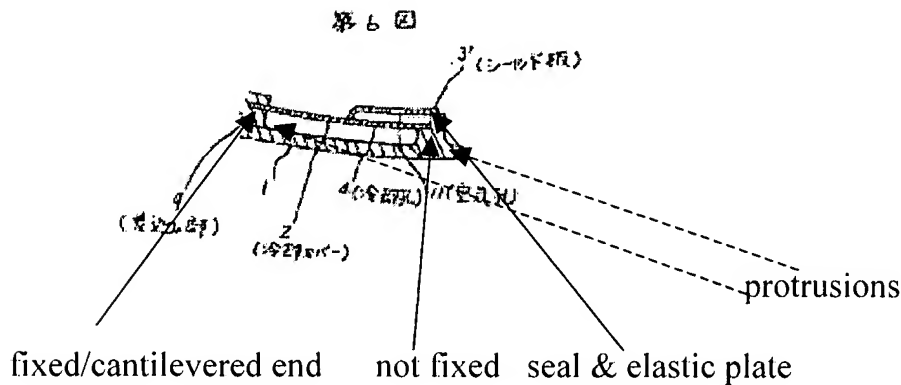
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 6, 7, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 63-80021. JP '021 teaches a cooling construction of a transition piece of a gas turbine, wherein: two protrusions are mounted on said transition piece orthogonally to a main stream direction of said transition piece on a gas turbine inside diameter side thereof and adjacent to an outlet portion of said transition piece; and a plate 2 having a plurality of holes is installed between said two protrusions, said plate having one end thereof fixed to one of said protrusions (near 9) and an other end thereof which is left unfixed. A cooling construction of a transition piece of a gas turbine, wherein: an impingement-cooling plate is fixed at one end thereof in a cantilever state (near 9) adjacent to an outlet portion of said transition piece on a gas turbine inside diameter side of said transition piece, said impingement cooling plate having an other end which is not fixed (near 3') and forms a

gap with said transition piece; and a seal 3' seals said gap between the other end of said impingement-cooling plate and said transition piece, said seal comprising an elastic plate.



Note that the left fixed end, as illustrated, requires that the plate 2 be inserted into the left end. Accordingly the right end cannot be fixed, due to the presence of the shield plate 3' which would block any further fixing steps from occurring.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 7, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over by JP 63-80021. JP '021 illustrates that the left fixed end, as illustrated, requires that the plate 2 be inserted into the left end. Accordingly the right end cannot be fixed, due to the presence of the shield plate 3' which would block any further fixing steps from occurring.

Alternately, it would have been obvious to one of ordinary skill in the art to employ the fixed end and unfixed end, in the manner described above, due to the presence of the seal plate 3' blocking fixing of the right end. Furthermore, the seal 3' being an elastic plate is regarded as inherent or present, but untranslated. Alternately, in case there is any doubt, it would have been obvious to one of ordinary skill in the art to make the plate 3' elastic, in order to better accommodate thermal expansion.

6. Claims 6, 7, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2003-065071 in view of either JP 63-080021 of the IDS or JP 62-288328. JP '071 teaches a cooling construction of a transition piece of a gas turbine wherein: two protrusions 3, 2 are mounted orthogonally to a main stream of said transition piece on a gas turbine inside diameter side thereof and adjacent to an outlet portion of said transition piece; a plate 4 having a plurality of holes 6 is installed between said two protrusions, said plate having ends fixed to both protrusions (see [0021 of the machine translation]). JP '071 does not teach only one end is fixed/cantilevered and the other end is not fixed nor the elastic seal plate. JP '021 teaches an impingement cover plate 2 (Fig. 5) with holes 4 on the outlet portion of the transition piece which possesses one end which is fixed/cantilevered (left side) and the other end which is not fixed 3'. This lowers the heat transfer rate on the said cover plate (see abstract). Alternately, JP '328 teaches an impingement cover plate 2 with holes 4 on the outlet portion of the transition piece which possesses one end which is fixed/cantilevered 4 and the other end which is not fixed at 3. This enables reduction of thermal stresses. It would have been obvious to one of ordinary

skill in the art to make one end fixed and the other end not fixed of the impingement plate, as taught by either JP '021 or JP '328, in order to lower the heat transfer rate on the impingement plate and/or reduce the thermal stresses. It would have been obvious to one of ordinary skill in the art to employ the elastic seal plate of JP '021, in order to facilitate reduction in thermal stresses.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2003-065071 in view of either JP 63-080021 of the IDS or JP 62-288328, as applied above, and further in view of Wilhelm, Jr. (3,652,181). JP '071 teaches various aspects of the claimed invention including a plurality number of cooling holes 8 made therein from the right/left to the left/right horizontally, viewed in a direction of combustion gas flow but does not disclose whether they are in a central portion only of the said transition piece. Wilhelm, Jr teaches a transition duct with cooling holes 19 in a central portion only of the said transition piece to optimize temperature profile exiting the transition (col. 2, lines 51+). It would have been obvious to one of ordinary skill in the art to employ the cooling holes only in the central portion, to optimize the temperature profile exiting the transition.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being obvious over any of the art applied above and further in view of Coslow (3,345,494). The JP '071 reference or the JP '021 reference teaches various aspects of the claimed invention but do not teach the end portions confronting relevant transition piece seals have protrusions mounted respectively in a manner that relevant protrusions overlap each other. However, this is a well known construction in the transition duct art, as evidenced by Coslow, who teaches

end portions confronting relevant transition piece seals have protrusions 52, 36 mounted respectively in a manner that relevant protrusions overlap each other to reduce the leakage past the seals (col. 2, lines 26+). It would have been obvious to one of ordinary skill in the art to employ the claimed overlapping protrusions, in order to reduce the leakage past the seals.

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being obvious over JP 2003-065071 in view of either JP 63-080021 of the IDS or JP 62-288328, in view of Wilhelm, Jr. (3,652,181), as applied above, and further in view of Coslow (3,345,494). The JP '071 reference teaches various aspects of the claimed invention but do not teach the end portions confronting relevant transition piece seals have protrusions mounted respectively in a manner that relevant protrusions overlap each other. However, this is a well known construction in the transition duct art, as evidenced by Coslow, who teaches end portions confronting relevant transition piece seals have protrusions 52, 36 mounted respectively in a manner that relevant protrusions overlap each other to reduce the leakage past the seals (col. 2, lines 26+). It would have been obvious to one of ordinary skill in the art to employ the claimed overlapping protrusions, in order to reduce the leakage past the seals.

Response to Arguments

10. Applicant's arguments filed 04/30/2007 have been fully considered but they are not persuasive with regard to the claims.

11. Applicant's arguments with regard to JP '021 are not persuasive, as they are directed to the incorrect Fig. Fig. 6 is the only Figure using element number 11

previously referenced by the Examiner, and that element number is part of the seal. As for applicant's arguments regarding JP '328, applicant's arguments are misdirected, as JP '328 clearly teaches one end with the bellows "is *slidably insertable* in the tail pipe."

Hence, this slidable end is free as the bellows expands and contracts to accommodate the thermal expansion and contraction.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax number for the organization where this application is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg, can be reached at 571-272-4828. Alternate inquiries to Technology Center 3700 can be made via 571-272-3700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at <http://www.uspto.gov/main/patents.htm>



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Entry Approved
MK
6/5/07

FIG.8 PRIOR ART

